(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization

International Bureau



(43) International Publication Date 13 May 2004 (13.05.2004)

PCT

(10) International Publication Number WO 2004/039722 A1

(51) International Patent Classification7: C01F 11/44, C05C 5/04, 5/00, 1/00

C01B 21/48,

(21) International Application Number:

PCT/NO2002/000400

(22) International Filing Date:

1 November 2002 (01.11.2002)

(25) Filing Language:

English

(26) Publication Language:

English

- (71) Applicant (for all designated States except US): NORSK HYDRO ASA [NO/NO]; N-0240 Oslo (NO).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): ISAKSEN, Jan, Birger [NO/NO]; Steinringen 53, N-3931 Porsgrunn (NO). MOLAND, Lars [NO/NO]; Folldalslia 17B. N-5239 Rådal (NO). OBRESTAD, Torstein [NO/NO]; Helgja, N-3830 Ulefoss (NO).
- (74) Agent: ANDERSON, Elin; Norsk Hydro ASA, N-0240 Oslo (NO).

- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHOD FOR PRODUCTION OF NITRATE-CONTAINING PRODUCTS FROM UNDERCOOLING MELTS

(57) Abstract: The invention concerns a method for the production of nitrate containing products (fertilizers, technical products) from undercooling melts, wherein a XN - water solution is evaporated up to a content of 50-99.8 weight % XN, where X is one or more selected from Ca, Mg, NH4, Na and K, and N means nitrate. The preferred range of XN is 70-99.5 weight %. The melt is cooled down to and kept at a temperature at or below the crystallisation point and finely divided solid XN powder consisting of the equilibrium phases is added to the melt. Melt drops are then formed and allowed to cool and solidify during up to 70 seconds. It is preferred to use a cooling belt for solidification of the particles. The belt is cooled by air, water, oil or another medium.



